Date: June 9, 1993

Job No. 7200-011

HDR

Transmittal

Transmittal To:

Name Bill Dunn

Firm City of Fresno, Water Division

Address 1910 E. University Ave.

City/State Fresno, CA 93703-2988

Transmittal From:

Name DAVE MURBACH Department 141

Autoattendant Number (916) 939-4100 Ext. 261

Bill:

Attached you will find:

1) two sample kits for Volunteer Nos. 21 and 63
2) extra copy of residential sample collection procedures
3) example sample activity form

Before distributing the sample kits, fill in the day and date you want to pickup the samples (at the top of the instruction sheet). After you drop off the sample kit to the address shown in the lower right-hand corner of the instructions, you will need to call the volunteer (if you don't see them at the door) to let them know that they need to sample the next morning and see if they have any questions. When you pickup the sample bottle you need to confirm that the number on the bottle matches the number on the instruction sheet label, confirm that at least six hours passed between the last time water was used and the time the sample was taken, and complete the label on the sample bottle with the date and time the sample was taken as well as the last name of the sampler. Before delivery of the sample bottle to the lab (BSK at 1414 Stanislaus St.), you need to fill out a sample activity form as shown on the example I sent.

The residential instruction form is generic and can be used at any time by filling out the date at the top of the page and placing an address label with the volunteer number in the lower right-hand corner. You may need to use this if there are any other homes that need to schedule their sampling before 6/21.

Please call me if you have any questions. Thanks.

Sample Activity Form

City of Fresno - Water Division, 1910 E. University Ave., Fresno, CA 93703

Fill out at BSK

Sampled by: Person delivering sample Relinquished by: _____ Date : ___/___/___ Time: ___ : ___ am pm

Received by: _____ Date : ___/___/___ Time: ___ : ___ am pm

Laboratory: _____ Lab Reference: _____ No of Samples: _____

Sample Detail

#	Date	Time	Type	Code	Location Description	502.2	504	505	507	508	515	525	531	547	900	N	F	CTY1	Pb, Cu, Tap	Lead DLR			
			AD		(Volunteer No.) Z1														X	X			
			"		63														X	X			

fill out sample date & time from bottle

Comments or Instructions:

PLEASE TAKE THIS WATER SAMPLE FOR CITY OF FRESNO'S WATER DIVISION TOMORROW MORNING ON _____, __/__/93.

IF YOU HAVE ANY QUESTIONS OR CANNOT TAKE THE SAMPLE FOR ANY REASON PLEASE CALL BILL DUNN AT 498-4136.

THANK YOU.

DIRECTIONS
RESIDENT TAP SAMPLE COLLECTION PROCEDURES

These samples are being collected to determine the contribution of faucet fixtures and household pipes and/or solder to the lead and copper levels in tap water. This sampling effort is required by the Environmental Protection Agency, and is being accomplished through the cooperation of homeowners and residents.

The collection procedure is described in detail below.

1. Do not use any water for 6-8 hours before sampling. The water department recommends that either early mornings or evenings upon returning home from work are the best sampling times to ensure that the necessary water conditions exist.

2. A kitchen or bathroom cold-water faucet is to be used for sampling. Place the open sample bottle below the faucet and gently open the cold water tap. Slowly fill the sample bottle to the base of the neck and turn off the water. It should take about 45 seconds to fill the bottle.

3. Tightly cap the sample bottle and place in the plastic bag provided. Fill in the information requested on the form below, sign the form, and place in the plastic bag along with the sample bottle. Please review the address label below at this time to ensure that all information contained on the label is correct.

4. Place the sample outside your home for pick-up by 9:00 in the morning.

5. Results from this monitoring effort will be provided to participating customers when reports are generated for the State.

Please call Bill Dunn at 498-4136 if you have any questions regarding these instructions.

TO BE COMPLETED BY RESIDENT:

PLEASE RETURN THIS SHEET WITH THE SAMPLE BOTTLE.

Water was last used: TIME:_____ DATE: _____

Sample was collected: TIME:_____ DATE: _____

I have read the above directions and have taken a tap sample in accordance with these directions.

Signature_____ DATE: _____

Name: _____

TO BE COMPLETED BY THE WATER DEPARTMENT EMPLOYEE:

Sample picked up by:_____ DATE:_____

0720001L008

ANALYTICAL BSK LABORATORIES
Environmental Services

1414 Stanislaus Street
Fresno, California 93706
Telephone (209) 485-8310
FAX (209) 485-6935
1-800-877-8310

JUL 27 1993

Fresno City Water Division
Attn: Doug Kirk
1910 East University Ave.
Fresno, CA 93703

Date Sampled : 06/17/93
Time Sampled : 0740
Date Received : 06/17/93
Report Issue Date: 06/30/93

Case Number : Ch931597
Lab ID Number : 1597
Project Number : None
Sample Description: L & C-1

Sample Type: LIQUID

Results of Analyses
EPA Lead and Copper Rule*

Compound	Method	Units	Results	DLR
Copper (Cu)...	EPA 200.7	mg/L	0.025	0.010
Lead (Pb).....	EPA 239.2	mg/L	0.0025	0.001
Turbidity.....	EPA 180.1	NTU	ND	0.1

KEY to ABBREVIATIONS

DLR: Detection Limit for the purposes of Reporting
mg/L: Milligrams per Liter
NTU: Nephelometric Turbidity Units

* The EPA Lead and Copper Rule includes several unique features. The sample is a "first draw" of a fixed volume (one liter). The turbidity analysis is performed after the sample is acidified with HNO_3. Reporting near the detection limit is as follows:

Copper: Values less than 0.01 mg/L are reported as **0** (zero); Values between 0.010 and 0.049 mg/L are reported as **0.025** mg/L; Values greater than 0.05 mg/L are reported directly.

Lead: Values less than 0.001 mg/L are reported as **0** (zero); Values between 0.0010 and 0.0049 mg/L are reported as **0.0025** mg/L; Values greater than 0.005 mg/L are reported directly.

cc: HDR Engineering

Cynthia Pigman, QA/QC Supervisor

Doug Beasy, Inorganics Manager

920916 LCR.T

Need copies when complete to HDR:

- Chain of Custodies (BSK) ✓
- Field Logs ✓
- Resident's Instructions (completed) ✓
- Revise Distribution Address List ✓
- Sample Log Sheet ✓

Sample Activity Form

City of Fresno - Water Division, 1910 E. University Ave., Fresno, CA 93703

Sampled by: Arthur Navarro Relinquished by: [signature] Date: 7/2/93 Time: 2:30 am (pm)

Received by: [signature] Date: 7/2/93 Time: 14:30 am pm

Laboratory: BSK Lab Reference: _____ No of Samples: _____

Sample Detail

#	Date	Time	Type	Code	Location Description	502.2	504	505	507	508	515	525	531	547	900	N	F	CTY1	Pb/Cu/Turb	Low PLC			
1	7/2/93	8:30 AM	AD		52														X	X			

Comments or Instructions:

1757 (A) (I) 7-15-93

Sample Activity Form

City of Fresno - Water Division, 1910 E. University Ave., Fresno, CA 93703

Sampled by: ARTHUR NAVARRO Relinquished by: Arthur Navarro Date: 7/2/93 Time: 9 : 00 am pm

Received by: [illegible] Date: 7/2/93 Time: 9 : 30 am pm

Laboratory: BSK FRES Lab Reference: 1757 No of Samples: 1

Sample Detail

#	Date	Time	Type	Code	Location Description	502.2	504	505	507	508	515	525	531	547	900	N	F	CTY1	Low DLR Ph IC/Trip				
1	7/2/93	7 AM	AD		118														XX				

Comments or Instructions:

BSK Log #: 1757 S L G
Sample Seal:
Container: 7/15/93

Sample Activity Form

City of Fresno - Water Division, 1910 E. University Ave., Fresno, CA 93703

Sampled by: ARTHUR NAVARRO Relinquished by: Don Burns Date: 7/1/93 Time: 4:32 am (pm)

Received by: D. Mills Date: 7/1/93 Time: __:__ am pm

Laboratory: D. A. Mills Lab Reference: _____ No of Samples: 3

Sample Detail

#	Date	Time	Type	Code	Location Description	502.2	504	505	507	508	515	525	531	547	900	N	F	CTY-1	PB/CU Filter	Low DLR	Calcium	Alkalinity
1	7/1/93	3:40 PM	PS		W-86														X	X	X	X

Comments or Instructions:

BSK Log #: 240 TYPE: S (L) G

Sample Seals: 1 P E Due Date: 7-14-93

Containers: 1 B L

Sample Activity Form

City of Fresno - Water Division, 1910 E. University Ave., Fresno, CA 93703

Sampled by: ARTHUR NAVARRO Relinquished by: Arthur Navarro Date: 7/1/93 Time: 10 : 20 am ~~pm~~

Received by: J.A. Vera Date: 7/1/93 Time: 10 : 25 am pm

Laboratory: BSK Lab Reference: 1734 No of Samples: _____

Sample Detail

#	Date	Time	Type	Code	Location Description	5022	5044	5055	5077	5088	5155	5255	5331	5477	9000	N	F	CTY1	Phillips Tech	LOW DLR			
1	6/30/93	6 AM	AD		20														X	X			
2	7/1/93	6:32 AM	AD		43														X	X			
3	7/1/93	7 AM	AD		48														X	X			
4	7/1/93	8 AM	AD		172														X	X			

Comments or Instructions:

BSK Log #: 1734 TYPE: S (L) G 7/14/93

Sample Seal: (A)

Containers: (1)

Sample Activity Form

City of Fresno - Water Division, 1910 E. University Ave., Fresno, CA 93703

Sampled by: Arthur Navarro Relinquished by: [signature] Date: 6/29/93 Time: 11 : 50 am pm

Received by: [signature] Date: 6/29/93 Time: 11 : 50 am pm

Laboratory: BSK Lab Reference: _____ No of Samples: _____

Sample Detail

#	Date	Time	Type	Code	Location Description	5022	5044	5055	5077	5088	5155	5255	5331	5470	9000	N	F	CTY1	Pb/Cu flush	Low DLR Calcium	Calcium	Alkalinity
1	6/29/93	6 AM	AD		134														X	X		
2	6/29/93	7 AM	AD		176														X	X		
3	6/29/93	9:25 AM	PS		W-140														X	X	X	X
4	6/29/93	9:55 AM	PS		W-KV-DS														X	X	X	X
5	6/29/93	8:40 AM	M		D-202																X	X

Comments or Instructions:

BSK Log #: 1220 TYPE: S (L) G

Sample Seals: (A) P B Due Date: 7-12-93

Containers: (I) B L

Sample Activity Form

City of Fresno - Water Division, 1910 E. University Ave., Fresno, CA 93703

Sampled by: ARTHUR NAVARRO Relinquished by: _____ Date: 6/28/93 Time: 4:07 am pm

Received by: _____ Date: 6/28/93 Time: 6:07 am pm

Laboratory: BSK Lab Reference: _____ No of Samples: _____

Sample Detail

#	Date	Time	Type	Code	Location Description	502.2	504	505	507	508	515	525	531	547	900	N	F	CTY1	Ph/Cultures	Low DLR	Calcium	Alkalinity
1	6/28/93	8 AM	AD		115														X	X		
2	6/28/93	6:37 AM	AD		166														X	X		
3	6/28/93	1:55 PM	PS		W-131														X	X	X	X
4	6/28/93	2:15 PM	M		D-68																X	X
5	6/28/93	2:45 PM	M		D-130																X	X
6	6/28/93	3:10 PM	M		D-134																X	X

Comments or Instructions:

BSK Log #: 1694 TYPE: S L G

Sample Seal: 1

Containers: 1

7-9-93

Sample Activity Form

City of Fresno - Water Division, 1910 E. University Ave., Fresno, CA 93703

Sampled by: ART NAVARRO Relinquished by: [signature] Date: 6/25/93 Time: 3:47 am pm

Received by: [signature] Date: 6/25/93 Time: 15:47 am pm

Laboratory: BSK Lab Reference: No of Samples:

Sample Detail

#	Date	Time	Type	Code	Location Description	502.2	504	505	507	508	515	525	531	547	900	N	F	CTY1	Pb/Cu/Turb	Low DLR	Calcium	Alkalinity	
1	6/25/93	7:45 AM	AD		137														X	X			
2	6/25/93	6:30 AM	AD		171																		
3	6/24/93	6:10 AM	AD		152																		
4	6/25/93	6 AM	AD		113																		
5	6/25/93	6 AM	AD		164																		
6	6/25/93	6 AM	AD		168																		
7	6/25/93	6 AM	AD		173																		
8	6/25/93	6:30 AM	AD		88																		
9	6/25/93	6 AM	AD		55																		
10	6/24/93	10:15 AM	AD		102																		

Comments or Instructions:

BSK Log #: 16864 TYPE: S

Sample Seals: A P B Due Date: 7-8-93

Containers: 1 B L

2003

Sample Activity Form

City of Fresno - Water Division, 1910 E. University Ave., Fresno, CA 93703

Sampled by: Art NAVARRO Relinquished by: [signature] Date: 6/25/93 Time: 3:47 am pm

Received by: [signature] Date: 6/25/93 Time: 15:47 am pm

Laboratory: BSK Lab Reference: _____ No of Samples: _____

Sample Detail

#	Date	Time	Type	Code	Location Description	502.2	504	505	507	508	515	525	531	547	900	N	F	CTY1	Ph/Cu/Fed	Low DLR	Calcium	Alkalinity
11	6/25/93	6 AM	AD		69														X	X		
12	6/25/93	6:25 AM	AD		117																	
13	6/25/93	6:45 AM	AD		74																	
14	6/25/93	7:01 AM	AD		89																	
15	6/25/93	9:20 AM	PS		W-91																X	X
16	6/25/93	11:15 AM	M		D-156																X	X
17	6/25/93	11:40 AM	M		D-128																X	X
18	6/25/93	12PM	M		D-159																X	X
19	6/25/93	12:15 PM	M		D-116																X	X
20	6/25/93	12:35 PM	M		D-158																X	X

Comments or Instructions:

BSK Log #: 1684 TYPE: S L G 6/25/93

Sample Seals: A P B Due Date: 7-8-93

Containers: I B L

303

Sample Activity Form

City of Fresno - Water Division, 1910 E. University Ave., Fresno, CA 93703

Sampled by: Arthur Navarro Relinquished by: [signature] Date: 6/25/93 Time: 3 : 47 am pm

Received by: [signature] Date: 6/25/93 Time: 15 : 47 am pm

Laboratory: BSK Lab Reference: _____ No of Samples: _____

Sample Detail

#	Date	Time	Type	Code	Location Description	5022	5044	5055	5077	5088	5155	5255	5311	5477	9000	N	F	CTY-	Pb/Cu Trig	Low DLR	Calcium	Alkalinity	
21	6/25/93	1:05 P	M		D-117																X	X	
22	6/25/93	1:30 P	M		D-155																X	X	
23	6/25/93	2 PM	M		D-69																X	X	
24	6/25/93	2:15 PM	M		D-70																X	X	
25	6/25/93	2:55	M		D-81																X	X	
26	6/24/93	6:15 AM	AD		174														X	X			

Comments or Instructions:

BSF Log #: 1684 Date: 7-8-93

Sample Seal: Y N

Container: D

Sample Activity Form

City of Fresno - Water Division, 1910 E. University Ave., Fresno, CA 93703

Sampled by: Art Navarro Relinquished by: Ruth Thomas Date: 6/24/93 Time: 3 : 35 am pm

Received by: Jeanine Harrison Date: 6/24/93 Time: 15 : 35 am pm

Laboratory: BSK & Cooc Lab Reference: _____ No of Samples: _____

Sample Detail

#	Date	Time	Type	Code	Location Description	502.2	504	505	507	508	515	525	531	547	900	N	F	CTYI	Calcium	Alkalinity	PSCU Lower X			
1	6/24/93	1:40	PS		W-79														X	X				
2	6/24/93	1:55	M		D-181														—					
3	6/24/93	2:15	M		D-79																			
4	6/24/93	2:30	M		D-129																			
5	6/24/93	2:55	M		D-31																			

Comments or Instructions:

BSK Log #: 1669
Sample Status:
Containers: 1 2 3 4 5

6/24/93

Sample Activity Form

City of Fresno - Water Division, 1910 E. University Ave., Fresno, CA 93703

Sampled by: A. Navarro Relinquished by: [signature] Date: 6/24/93 Time: 1:00 ~~am~~ pm

Received by: [signature] Date: 6/24/93 Time: 13:05 am pm

Laboratory: BBK & Assoc. Lab Reference: _____ No of Samples: _____

Sample Detail

#	Date	Time	Type	Code	Location Description	502.2	504	505	507	508	515	525	531	547	900	N	F	CTY1	Pb/Cu/Turb	Low DLR			
	6/24/93	0645	AD		40														X	X			
	↓	0550	↓		29														/	/			
		0400			100																		
		0546			120																		
		0700			21																		
		0600			114																		
		0730			110																		
	↓	0516	↓		105																		

Comments or Instructions:

Sample Activity Form

City of Fresno - Water Division, 1910 E. University Ave., Fresno, CA 93703

Sampled by: A Navarro Relinquished by: [signature] Date: 6/24/93 Time: 1:00 am pm

Received by: [signature] Date: 6/24/93 Time: 13:05 am pm

Laboratory: BSK + Boose Lab Reference: _____ No of Samples: _____

Sample Detail

#	Date	Time	Type	Code	Location Description	502.2	504	505	507	508	515	525	531	547	900	N	F	CTY1	Pb/Cu/Turb.	Low Dbl			
	6/24/93	0800	AD		81														x	x			
		0610			56														—	—			
		0805			158														—	—			
		0544			142														—	—			
		0600			159														—	—			
		0000			95														—	—			
		0530			5														—	—			
		0600			72														—	—			
		0540			93														—	—			
		0810			30														↓	↓			

Comments or Instructions:

BSK Log #: 1661 TYPE: S L C

Sample Seals: A P B Date: 7/7/93

Containers: I B L

Sample Activity Form

City of Fresno - Water Division, 1910 E. University Ave., Fresno, CA 93703

Sampled by: A. NAVARRO Relinquished by: [signature] Date: 6/24/93 Time: 1:00 ~~am~~ pm

Received by: [signature] Date: 6/24/93 Time: 13:05 am pm

Laboratory: BSK, Fresno Lab Reference: _____ No of Samples: _____

Sample Detail

#	Date	Time	Type	Code	Location Description	502.2	504	505	507	508	515	525	531	547	900	N	F	CTYL	Calcium	Alkalinity			
	6/23/93	1440	M		D-34														X	X			
	6/23/93	1430	M		D-36														X	X			
	6/23/93	1500	M		D-82														X	X			
	6/23/93	1515	M		D-66														X	X			
	6/23/93	1530	M		D-76														X	X			
	6/24/93	10:00	M		D-126														X	X			

Comments or Instructions:

BSK Log #: 16622 TYPE: S L G

Sample Seals: A P B Date: 7/1/93

Containers: I B L

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

LOCATION: W-86 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A.M.

Date = 7/1 Time = 3:40

pH = 7.16

Temp. = 22.7 deg C

Conductivity = 0.55 mS/cm

LOCATION: _____ (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = _____

Date = _____ Time = _____

pH = _____

Temp. = _____ deg C

Conductivity = _____ mS/cm

LOCATION: _____ (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = _____

Date = _____ Time = _____

pH = _____

Temp. = _____ deg C

Conductivity = _____ mS/cm

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

LOCATION: W-140 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A.M

Date = 6/29 Time = 9:25 AM

pH = 7.12

Temp. = 23.4 deg C

Conductivity = 0.36 mS/cm

LOCATION: W-KV-DS (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A.M.

Date = 6/29 Time = 9:55 AM

pH = 7.46

Temp. = 23.3 deg C

Conductivity = 0.28 mS/cm

LOCATION: _____ (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = _____

Date = _____ Time = _____

pH = _____

Temp. = _____ deg C

Conductivity = _____ mS/cm

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

LOCATION: D-130 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A.M.

Date = 6/28 Time = 2:45 P

pH = 7.28

Temp. = 25.2 deg C

Conductivity = 0.26 mS/cm

LOCATION: D-134 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A.M.

Date = 6/28 Time = 3:10 P

pH = 7.50

Temp. = 26.7 deg C

Conductivity = 0.23 mS/cm

LOCATION: D-202 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A.M.

Date = 6/29 Time = 8:35 AM

pH = 7.68

Temp. = 22.8 deg C

Conductivity = 0.23 mS/cm

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

LOCATION: D-81 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = G. M

Date = 6/25/13 Time = 2:55

pH = 7.24

Temp. = 29.7 deg C

Conductivity = 0.29 mS/cm

LOCATION: W-131 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = G. M.

Date = 6/28 Time = 1:55

pH = 7.42

Temp. = 24.4 deg C

Conductivity = 0.26 mS/cm

LOCATION: D-68 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = G. M.

Date = 6/28 Time = 2:15 P

pH = 7.13

Temp. = 24.9 deg C

Conductivity = 0.47 mS/cm

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

LOCATION: D-129 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A. M.

Date = 6/24/93 Time = 2:30

pH = 7.25

Temp. = 25.8 deg C

Conductivity = 0.28 mS/cm

LOCATION: D-31 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A.M

Date = 6/24/93 Time = 2:55

pH = 7.26

Temp. = 26.1 deg C

Conductivity = 0.35 mS/cm

LOCATION: W-91 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A. M.

Date = 6/25/93 Time = 10:20 AM

pH = 7.63

Temp. = 22.3 deg C

Conductivity = 0.27 mS/cm

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

LOCATION: D-158 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A.M

Date = 6/25/93 Time = 12:35 P

pH = 7.16

Temp. = 27.8 deg C

Conductivity = 0.35 mS/cm

LOCATION: D-117 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A.M

Date = 6/25/93 Time = 1205 P

pH = 7.32

Temp. = 28.1 deg C

Conductivity = 0.31 mS/cm

LOCATION: D-155 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A M

Date = 6/25/93 Time = 1:30

pH = 7.23

Temp. = 29.7 deg C

Conductivity = 0.25 mS/cm

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

LOCATION: D-156 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = G.M.

Date = 6/25/93 Time = 11:15 AM

pH = 7.20

Temp. = 29.5 deg C

Conductivity = 0.28 mS/cm

LOCATION: D-128 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = G.M.

Date = 6/25/93 Time = 11:40

pH = 7.21

Temp. = 26.2 deg C

Conductivity = 0.27 mS/cm

LOCATION: D-159 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = G.M.

Date = 6/25/93 Time = 12 PM

pH = 7.22

Temp. = 25.7 deg C

Conductivity = 0.37 mS/cm

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

LOCATION: D-116 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A. M.

Date = 6/25/93 Time = 12:15 PM

pH = 7.03

Temp. = 25.8 deg C

Conductivity = 0.36 mS/cm

LOCATION: D-69 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A. M.

Date = 6/25/93 Time = 2 PM

pH = 7.03

Temp. = 26.7 deg C

Conductivity = 0.47 mS/cm

LOCATION: D-70 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A. M

Date = 6/25/93 Time = 2:15

pH = 7.12

Temp. = 29.7 deg C

Conductivity = 0.28 mS/cm

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

LOCATION: W-79 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A M.

Date = 6/24 Time = 1:40

pH = 7.29

Temp. = 23.2 deg C

Conductivity = 0.33 mS/cm

LOCATION: D-181 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A.M

Date = 6/24 Time = 1:55

pH = 7.32

Temp. = 26.6 deg C

Conductivity = 0.31 mS/cm

LOCATION: D-79 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A.M.

Date = 6/24/93 Time = 2:15

pH = 7.43

Temp. = 26.5 deg C

Conductivity = 0.27 mS/cm

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

LOCATION: D-66 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A. M

Date = 6/23 Time = 3:15

pH = 7.47

Temp. = 25.4 deg C

Conductivity = 0.21 mS/cm

LOCATION: D-76 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A. M.

Date = 6/23 Time = 3:30

pH = 7.30

Temp. = 24.5 deg C

Conductivity = 0.23 mS/cm

LOCATION: D-126 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A. M.

Date = 6/24 Time = 10:00

pH = 7.74

Temp. = 23.9 deg C

Conductivity = 0.29 mS/cm

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

LOCATION: D# 31 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A. M.

Date = 6/23 Time = 2:25

pH = 7.51

Temp. = 25.8 deg C

Conductivity = 0.36 mS/cm

LOCATION: D-34 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = ~~D-34~~ A. M.

Date = 6/23 Time = 2:45

pH = 7.68

Temp. = 28.6 deg C

Conductivity = 0.30 mS/cm

LOCATION: D-82 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A M.

Date = 6/23 Time = 3:00

pH = 7.34

Temp. = 25.6 deg C

Conductivity = 0.28 mS/cm

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

LOCATION: W-99 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = DMM

Date = 6/23 Time = 0830

pH = 7.53

Temp. = 22.1 deg C

Conductivity = 0.27 mS/cm

LOCATION: #133 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A. M.

Date = 6/23 Time = 0845

pH = 7.45

Temp. = 25.4 deg C

Conductivity = 0.25 mS/cm

LOCATION: W-97 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A. M.

Date = 6/23 Time = 9:55

pH = 7.36

Temp. = 22.9 deg C

Conductivity = 0.30 mS/cm

TABLE 5. Distribution System Sample Locations

Distribution System Sample Number	Distribution System Location Number	Address	Associated Pump Station Number
1	6/24 79	[redacted]	91
2	6/24 129		79, 97
3	6/24 126		KV-DS
4	6/28 68		86, 131
5	6/24 70		86
6	6/24 116		140
7	6/23 133 6/23*		99
8	6/24 181 6/24		97
9	6/24 31 295		General* (91)
10	6/28 130		General* (91)
11	6/23 66		General* (KV-DS)
12	6/24 159		General* (86, 140)
13	6/24 158		General* (140)
14	6/28 134		General* (99)
15	6/23 34 5472		General* (99)
16	6/23 36 3037		General* (99)
17	6/29 202		General* (97)
18	6/24 81		General* (97)
19	6/24 155		General* (131)
20	6/24 69		General* (131)
21	6/23 82 *		General**
22	6/24 156		General**
23	6/24 128		General**
24	6/24 117		General**
25	6/23 76		General**

* General distribution system sample location , number in ( ) represents remotely associated pump station.

** General distribution system sample located in the same region as the tap sample locations.

TABLE 3. Source Water Sample Locations

Pump Station Number	Address	Location	Associated Tap Sample Numbers
* 91	(b) (9) [redacted]	(b) (9) [redacted]	1,3
79			2
KV-DS			4,144,158
86			10
* 140			Tract B*
99			Tract C*
97			Tract D*
131			Tract E*

* Tract B contains 63 sample sites, Tract C contains 46 sample sites, Tract D contains 29 sample sites, and Tract E contains 17 sample sites.

* Do not sample between 7 AM + 6 PM

TABLE 4. Source Sample Analytical Methods

Compound	EPA Method	Units	DLR*	Sample Container
Copper	200.7	mg/L	0.010	1 L polyethylene
Lead	239.2	mg/L	0.001	taken with copper
Calcium	200.7	mg/L	0.1	200 mL polyethylene
Alkalinity	310.1	mg/L as $CaCO_3$	1.0	100 mL polyethylene

* Detection limit for the purposes of reporting

Sample Activity Form

City of Fresno - Water Division, 1910 E. University Ave., Fresno, CA 93703

Sampled by: ARTHUR NAVARRO Relinquished by: Art Navarro Date: 9/23/93 Time: 13 : 52 am (pm)

Received by: Cecil Harris Date: 9/23/93 Time: 13 : 52 am (pm)

Laboratory: BSK Lab Reference: _____ No of Samples: 3

Sample Detail

#	Date	Time	Type	Code	Location Description	502.2	504	505	507	508	515	525	531	547	900	N	F	CTY 1.	Pb/Cu Field	Low DLR			
1	9/23/93	6:15 AM	AD		#142-1														X	X			
2	9/23/93	6:15 AM	AD		#142-2														X	X			
3	9/23/93	6:30 AM	AD		#173														X	X			

Comments or Instructions:

BSK Log #: 2560 TYPE: S (L) G

Sample Seals: P B Due Date: 10-5-93

Containers: 8 B L

Sample Activity Form

City of Fresno - Water Division, 1910 E. University Ave., Fresno, CA 93703

Sampled by: Art Navarro Relinquished by: _____ Date: 9/22/93 Time: __ : __ am pm

Received by: James Garrison Date: 9/22/93 Time: 15 : 15 am pm

Laboratory: BSK Labs Lab Reference: _____ No of Samples: _____

Sample Detail

#	Date	Time	Type	Code	Location Description	502.2	504	505	507	508	515	525	531	547	900	N	F	CTYL	Pb/Cu Lab	Low DLR			
1	9/22/93	8 AM	AD		#151														X	X			
2	9/22/93	6:15 AM	AD		#148														X	X			
3	9/22/93	6:32 AM	AD		#161														X	X			
4	9/22/93	6 AM	AD		#155														X	X			

Comments or Instructions:

BSK Log #: 2553 TYPE: S L G

Sample ... Date: 10/4/93

Conta... (AT)

QUICK MEMO

DATE: August 5, 1993

TO: WTH, DLT, WEB, DSK, DEP, WJD

FROM: MARTIN R. MCINTYRE MRM

SUBJECT: LEAD/COPPER SAMPLE RESULTS

As previously reported, our first round of sampling resulted in a 90th percentile lead value of 2.5 ppb- very good as the corrosion control optimization kicks in if the rise from source to tap is >than 5 ppb.

The Regulation required us to do a second round of sampling from the same taps six months later. Enter the accelerator of all chemical reactions- increased temperature. This second round collected in june/july resulted in a 90th percentile of 8 ppb, triggering a requirement to implement corrosion control optimization.

Given the 8 ppb results, the next step required by the regulation is a bench scale corrosion study. I have Discussed with HDR- they believe that there is a good chance that EPA will accept a "desk top" study which could demonstrate that the 8 ppb is equivalent to optimized corrosion control. The underlying assumption is that we can show that existing corrosion control programs in place elsewhere can't do any better than our existing condition. I'm reserving judgement on viability of this approach until after we meet with HDR- probably the week of Aug 15. Existing scope of work with HDR covers work through a bench scale corrosion study and includes the "desk top".

Bottom line- all is not well in the hinterland. May still dodge the corrosion control/lead bullet but its not assured.

Date: 8/2/93

To: Bill Dunn
From: Pat Nyasso
Subject: Lead + Copper Sample Taken From Pump Station # 86

A. Status of Well Prior Collection of Sample (Information From Don Burns)

- Well was off for 3 weeks for repairs
- Pump + Motor were pulled + repaired
- Well was super Chlorinated
- Acid was also added to Well casing
- Well ran for 5-10 minutes prior to collection of sample

B. Current Status of Well, Since Collection of First Sample

- Well is still not of line
- Has not passed Bac-T test
- Has Plate count of 3090
- Has been super chlorinated several times
- Metal flakes ~~spotted~~ seen during flushing

Note: Second sample may also not be valid due to chemical treatment prior to sample collection

Date: June 17, 1993

Number of Pages (including cover page) 2

Job No. 7200.011

HDR

Message To

Name Bill Dunn	Fax number called 209-488-1024
Firm Water Division	
City Fresno	State CA

If you did not receive all the pages, please call (916) 939-4100 as soon as possible.

FAX No (916) 939-4143

From

Name DAVE MURBACH	Department 141
Autoattendant Number (916) 939-4100	Ext. 261

Bill:

Attached is my schedule for activities next week. I plan to arrive at about 9:00 on Monday so that we can start delivering sample kits by 10:00. The schedule isn't all that rigid. I plan on getting back to your office between 3:30 and 4:00 each day so I can bring you up to speed.

Also I'd like to schedule a meeting for either 11:00 or 1:00 with you (and Martin, if he's not too busy) on Thursday so I can let you know what's left to be done of Friday.

Call me if you have any questions. Thanks.

Dave

FRESNO LEAD & COPPER RULE

DMM schedule for week of June 21-24

Date	Time of Day				
	7:30 - 9:30	9:30 - 11:30	12:00 - 2:00	2:00 - 4:00	4:00 - 6:00
21-Jun	arrive In Fresno*, City pickup sample bottles	deliver sample kits	deliver sample kits	deliver sample kits	call @ sample bottles delivered
22-Jun	pickup samples	deliver samples to lab	deliver sample kits	deliver sample kits	call @ bottles delivered and no samples from 6/21
23-Jun	pickup samples	deliver samples to lab	distribution and source samples	distribution and source samples	call @ bottles delivered and no samples from 6/22
24-Jun	pickup samples & deliver to lab	call @ no bottles from 6/23	meet with Martin & Bill**	return to Sacramento	

* Arrive in Fresno by 9:30

** Meet at 11:00 if better, need to discuss work in remainder of week.

PLEASE TAKE THIS WATER SAMPLE FOR CITY OF FRESNO'S WATER DIVISION TOMORROW MORNING ON _____, __/__/93.

IF YOU HAVE ANY QUESTIONS OR CANNOT TAKE THE SAMPLE FOR ANY REASON PLEASE CALL BILL DUNN AT 498-4136.

THANK YOU.

DIRECTIONS
RESIDENT TAP SAMPLE COLLECTION PROCEDURES

The collection procedure is described in detail below.

1. Do not use any water for 6-8 hours before sampling. The water department recommends that either early mornings or evenings upon returning home from work are the best sampling times to ensure that the necessary water conditions exist.

2. A kitchen or bathroom cold-water faucet is to be used for sampling. Place the open sample bottle below the faucet and gently open the cold water tap. Slowly fill the sample bottle to the base of the neck and turn off the water. It should take about 45 seconds to fill the bottle.

3. Tightly cap the sample bottle and place in the plastic bag provided. Fill in the information requested on the form below, sign the form, and place in the plastic bag along with the sample bottle. Please review the address label below at this time to ensure that all information contained on the label is correct.

4. Place the sample outside your home for pick-up by 9:00 in the morning.

5. Results from this monitoring effort will be provided to participating customers when reports are generated for the State.

Please call Bill Dunn at 498-4136 if you have any questions regarding these instructions.

TO BE COMPLETED BY RESIDENT:

PLEASE RETURN THIS SHEET WITH THE SAMPLE BOTTLE.

Water was last used: TIME:_____ DATE: _____

Sample was collected: TIME:_____ DATE: _____

I have read the above directions and have taken a tap sample in accordance with these directions.

Signature_____ DATE: _____

Name: _____

TO BE COMPLETED BY THE WATER DEPARTMENT EMPLOYEE:

Sample picked up by:_____ DATE:_____

0720001L068

June 2,1993
07200011.010

HDR

Mr. Patrick Chan
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, California 94105-3901

Subject: City of Fresno - Lead and Copper Rule, First Round Monitoring Results - Preliminary Report.

Dear Patrick:

The intent of this letter is to transmit to you a summary of the results of the tap water sample analysis and the first set of source and distribution system water quality analysis. A final report detailing the results will follow after the results for the second round of water quality sampling are received. These results are expected by the middle of June.

The City of Fresno sampled tap water from 131 homes for lead and copper. All the homes were from a Tier 1-C sample pool. In addition to the above sampling, water quality samples were collected from 25 distribution system sites and eight pump stations identified as the source water for the residences sampled. The attached technical memorandum summarizes these results.

The City of Fresno will be conducting the second round of the initial tap water and water quality monitoring in late June 1993.

If you have any questions concerning these results please call me.

Very Truly Yours,

Dave Murbach
for Perri Standish-Lee
Vice President

cc: Martin McIntyre - City of Fresno
Doug Kirk - City of Fresno
Bill Dunn - City of Fresno
Matt Bullis - City of Fresno
Cindy Forbes - California Department of Health Services
Steve Reiber - HDR Engineering, Inc.
Dave Murbach - HDR Engineering, Inc.

HDR Engineering, Inc.
5175 Hillsdale Circle
El Dorado Hills, California
95762-5700
Telephone
916 939-4100

TECHNICAL MEMORANDUM
CITY OF FRESNO
LEAD AND COPPER RULE COMPLIANCE MONITORING
PRELIMINARY RESULTS OF INITIAL MONITORING - FIRST ROUND

The City of Fresno collected their first round of initial monitoring samples in compliance with the Lead and Copper Rule during April and May, 1993.

TAP WATER SAMPLE RESULTS

Table 1 presents the results of the tap water analysis for lead and copper. The City of Fresno sampled 131 single family residences that comprised a Tier 1-C sample pool. The table lists the lead and copper concentrations in descending order. This was done in order to determine the 90th percentile levels as required by the Lead and Copper Rule.

Lead Results

The 90th percentile lead level was determined by multiplying the number of samples taken by 0.9 (131 x 0.9 = 117.9). The 90th percentile lead level for the City of Fresno samples is 0.0025 mg/L which is below the EPA action level of 0.015 mg/L. It should be noted that the laboratory reports all analyzed lead values between 0.0010 and 0.0049 mg/L as 0.0025 mg/L.

Copper Results

The 90th percentile copper level was determined in the same way as for lead. The 90th percentile copper level for the City of Fresno is 0.43 mg/L which is below the EPA action level of 1.3 mg/L.

DISTRIBUTION SYSTEM AND POINT OF ENTRY SAMPLE RESULTS

Water quality analysis was performed on 25 distribution system locations and 8 points of entry to the distribution system. The results of this analysis are summarized in Tables 2 and 3. These results are the first set of two sets of sampling that will be performed in conjunction with the first round of initial monitoring.

The lead concentration of the source water was less than 0.001 mg/L at all sample locations.

FOLLOW-UP MONITORING

To comply with the requirements of the Lead and Copper Rule a second round must be conducted to complete the initial monitoring period. This second round of sampling will begin during the last week of June 1993.

TABLE 1. TAP WATER SAMPLE ANALYSIS

Ranking		Sample No.	Lead mg/L		Sample No.	Copper mg/L
131		169	0.037		153	0.74
130		154	0.011		159	0.60
129		157	0.008		18	0.56
128		10	0.007		54	0.53
127		18	0.006		174	0.52
126		151	0.006		137	0.51
125		90	0.005		156	0.51
124		1	0.0025*		175	0.51
123		2	0.0025*		21	0.50
122		3	0.0025*		128	0.48
121		11	0.0025*		1	0.47
120		41	0.0025*		166	0.47
119		48	0.0025*		171	0.45
118	90th %	53	0.0025*	90th %	80	0.43
117		54	0.0025*		151	0.43
116		60	0.0025*		146	0.42
115		64	0.0025*		152	0.42
114		65	0.0025*		53	0.39
113		72	0.0025*		72	0.39
112		81	0.0025*		20	0.38
111		93	0.0025*		83	0.38
110		95	0.0025*		176	0.38
109		102	0.0025*		133	0.37
108		109	0.0025*		67	0.36
107		110	0.0025*		132	0.36
106		113	0.0025*		150	0.36
105		114	0.0025*		169	0.36
104		117	0.0025*		27	0.35
103		118	0.0025*		81	0.35
102		119	0.0025*		90	0.35
101		129	0.0025*		141	0.35
100		130	0.0025*		145	0.35
99		132	0.0025*		161	0.34
98		134	0.0025*		41	0.33
97		135	0.0025*		46	0.33
96		136	0.0025*		142	0.33
95		137	0.0025*		10	0.32
94		140	0.0025*		95	0.32
93		141	0.0025*		113	0.32
92		152	0.0025*		130	0.32
91		155	0.0025*		168	0.32
90		163	0.0025*		26	0.31
89		166	0.0025*		148	0.31
88		168	0.0025*		88	0.30
87		170	0.0025*		93	0.30
86		171	0.0025*		42	0.28
85		172	0.0025*		48	0.28

TABLE 1. TAP WATER SAMPLE ANALYSIS

Ranking		Sample No.	Lead mg/L		Sample No.	Copper mg/L
84		173	0.0025*		11	0.27
83		174	0.0025*		65	0.26
82		175	0.0025*		107	0.26
81		176	0.0025*		120	0.26
80		4	< 0.001		2	0.25
79		20	< 0.001		30	0.25
78		21	< 0.001		64	0.25
77		25	< 0.001		115	0.25
76		26	< 0.001		149	0.25
75		27	< 0.001		163	0.25
74		30	< 0.001		165	0.25
73		36	< 0.001		79	0.24
72		38	< 0.001		75	0.23
71		39	< 0.001		102	0.23
70		40	< 0.001		114	0.23
69		42	< 0.001		51	0.22
68		43	< 0.001		62	0.22
67		46	< 0.001		39	0.21
66		50	< 0.001		63	0.21
65		51	< 0.001		124	0.21
64		52	< 0.001		109	0.20
63		55	< 0.001		55	0.19
62		56	< 0.001		76	0.19
61		57	< 0.001		100	0.19
60		58	< 0.001		119	0.19
59		61	< 0.001		131	0.19
58		62	< 0.001		136	0.19
57		63	< 0.001		170	0.19
56		66	< 0.001		71	0.18
55		67	< 0.001		78	0.18
54		69	< 0.001		112	0.18
53		71	< 0.001		4	0.17
52		74	< 0.001		40	0.17
51		75	< 0.001		50	0.17
50		76	< 0.001		89	0.17
49		78	< 0.001		110	0.17
48		79	< 0.001		143	0.17
47		80	< 0.001		164	0.17
46		83	< 0.001		25	0.16
45		84	< 0.001		125	0.16
44		86	< 0.001		38	0.15
43		87	< 0.001		157	0.15
42		88	< 0.001		173	0.15
41		89	< 0.001		56	0.14
40		91	< 0.001		58	0.14
39		92	< 0.001		66	0.14
38		98	< 0.001		87	0.14

TABLE 1. TAP WATER SAMPLE ANALYSIS

Ranking		Sample No.	Lead mg/L		Sample No.	Copper mg/L
37		100	< 0.001		118	0.14
36		103	< 0.001		167	0.14
35		105	< 0.001		91	0.13
34		107	< 0.001		105	0.13
33		108	< 0.001		108	0.13
32		111	< 0.001		122	0.13
31		112	< 0.001		3	0.12
30		115	< 0.001		98	0.12
29		116	< 0.001		129	0.12
28		120	< 0.001		139	0.12
27		122	< 0.001		172	0.12
26		123	< 0.001		43	0.11
25		124	< 0.001		135	0.11
24		125	< 0.001		57	0.10
23		126	< 0.001		60	0.10
22		127	< 0.001		92	0.10
21		128	< 0.001		116	0.10
20		131	< 0.001		144	0.10
19		133	< 0.001		36	0.09
18		139	< 0.001		61	0.09
17		142	< 0.001		111	0.09
16		143	< 0.001		127	0.09
15		144	< 0.001		86	0.08
14		145	< 0.001		155	0.08
13		146	< 0.001		126	0.07
12		147	< 0.001		134	0.07
11		148	< 0.001		147	0.07
10		149	< 0.001		103	0.06
9		150	< 0.001		117	0.06
8		153	< 0.001		123	0.06
7		156	< 0.001		52	0.025**
6		158	< 0.001		69	0.025**
5		159	< 0.001		74	0.025**
4		161	< 0.001		84	0.025**
3		164	< 0.001		140	0.025**
2		165	< 0.001		158	0.025**
1		167	< 0.001		154	<0.01

* The laboratory reports lead values between 0.0010 and 0.0049 mg/L as 0.0025 mg/L.

** The laboratory reports copper values between 0.010 and 0.049 mg/L as 0.025 mg/L.

TABLE 2. DISTRIBUTION SYSTEM WATER QUALITY ANALYSIS

Sample No.	Alkalinity (mg/L CaCO3)	Calcium (mg/L)	Field Analysis					
			pH	Temp. (deg C)	Cond. (mS/cm)	Date Sampled	Time Sampled	Sampler
D-31	140	29	7.19	22.4	0.34	5/3/93	12:30	JAM
D-34	120	26	7.58	22.7	0.29	4/30/93	14:55	JAM
D-36	110	27	7.44	22.8	0.30	4/30/93	15:15	JAM
D-66	91	18	7.48	20.8	0.20	4/29/93	10:45	JAM
D-68	160	37	7.15	21.8	0.38	4/29/93	12:30	JAM
D-69	140	35	7.22	23.6	0.35	4/30/93	14:00	JAM
D-70	93	20	7.56	21.5	0.23	4/29/93	15:10	JAM
D-76	110	22	7.56	20.6	0.25	5/4/93	9:25	JAM
D-79	97	23	7.54	22.1	0.26	5/3/93	10:55	JAM
D-81	110	28	7.38	23.5	0.31	5/3/93	10:05	JAM
D-82	110	26	7.63	22.8	0.28	5/3/93	15:45	JAM
D-116	140	34	7.22	24.3	0.33	5/3/93	14:20	JAM
D-117	130	33	7.39	23.6	0.32	5/3/93	15:00	JAM
D-126	79	17	7.55	22.5	0.19	4/29/93	9:55	JAM
D-128	170	35	7.10	22.5	0.36	5/3/93	13:00	JAM
D-129	110	27	7.33	25.4	0.31	5/3/93	9:17	JAM
D-130	110	23	7.41	22.4	0.27	5/3/93	11:15	JAM
D-133	120	25	7.47	21.0	0.28	4/22/93	11:10	DMM
D-134	110	26	7.46	23.8	0.28	4/30/93	15:40	JAM
D-155	81	17	7.44	23.4	0.21	4/29/93	13:15	JAM
D-156	130	25	7.27	23.2	0.29	5/3/93	14:45	JAM
D-158	120	25	7.37	24.0	0.29	5/3/93	14:00	JAM
D-159	130	26	7.17	23.5	0.31	4/29/93	15:25	JAM
D-181	120	27	7.44	22.9	0.32	5/3/93	9:45	JAM
D-202	120	28	7.34	23.0	0.31	5/3/93	9:30	JAM

Average	116	26	7.43	22.2	0.29
Minimum	91	18	7.15	20.6	0.20
Maximum	160	37	7.63	23.6	0.38

TABLE 3. SOURCE WATER QUALITY ANALYSIS

Sample No.	Lead (mg/L)	Copper (mg/L)	Alkalinity (mg/L CaCO3)	Calcium (mg/L)	Field Analysis					
					pH	Temp. (deg C)	Cond. (mS/cm)	Date Sampled	Time Sampled	Sampler
W-79	<0.001	<0.01	130	28	7.43	23.1	0.30	5/3/93	10:20	JAM
W-86	<0.001	<0.01	130	30	7.30	23.1	0.31	4/29/93	14:50	JAM
W-91	<0.001	<0.01	99	23	7.74	21.4	0.26	5/3/93	10:35	JAM
W-97	<0.001	<0.01	110	27	7.32	21.9	0.30	5/3/93	9:05	JAM
W-99	<0.001	0.025*	89	17	7.57	21.5	0.21	4/22/93	10:45	DMM
W-131	<0.001	<0.01	97	19	7.41	24.0	0.23	4/29/93	11:15	JAM
W-140	<0.001	<0.01	110	31	7.15	31.8	0.35	4/28/93	13:55	JAM
W-KVDS	<0.001	<0.01	79	16	7.62	22.5	0.20	4/29/93	10:17	JAM

Average	<0.001	0.003	106	24	7.44	23.7	0.27
Minimum	<0.001	<0.01	79	16	7.15	21.4	0.20
Maximum	<0.001	0.025*	130	31	7.74	31.8	0.35

* The laboratory reports copper values between 0.010 and 0.049 mg/L as 0.025 mg/L.

Date: May 27, 1993

Number of Pages (including cover page) 2

Job No. 7200-011

HDR

Message To

Name Bill Dunn	Fax number called 209-488-1024
Firm Water Division	
City Fresno	State CA

If you did not receive all the pages, please call (916) 939-4100 as soon as possible.
FAX No (916) 939-4143

From

Name DAVE MURBACH	Department 141
Autoattondant Number (916) 939-4100	Ext. 261

Bill:

Attached is the letter that needs to go to the 130 residences sampled during the first round of sampling to inform them when the second round of sampling will occur.

In the past we've followed the steps below to get the letter sent out to the customers:

- Jeff and Martin review the letter and make any minor changes as needed
- The letter is retyped on the City's letterhead and signed by Martin
- The letter is sent back to HDR along with the City's envelopes
- HDR copies the original letter, creates the address labels, and mails out all the letters

In this case I will need at least 130 envelopes to mail these letters and if I get the original letter back by next Tuesday, they will all be mailed by June 2.

Call me if you have any questions. Thanks.

June 1, 1993

Dear Resident:

Thank you for participating in our lead and copper tap water monitoring program. The success of this program has been dependent upon people like you who volunteered to collect the residential tap water samples according to the requirements of the U.S. Environmental Protection Agency (EPA) for the Lead and Copper Rule.

A total of 130 tap water samples were collected from different residences in the City of Fresno's service area between April 21 and April 30, 1993. ~~A preliminary review of the analytical results from these samples shows that the results for both lead and copper are reassuringly very low~~. You will be receiving your individual results after we have completed the second round of lead and copper tap water monitoring.

The EPA Lead and Copper Rule requires a second round of monitoring to verify the initial results, and with your permission, we would like to receive another sample from your home during the week of June 21-25. We will be delivering sample bottles and instructions on Monday, Tuesday, and Wednesday of that week. Please follow the instructions again and collect the sample by the morning after you receive your sample bottle, if possible. If you will not be available during this week, please call Bill Dunn at 498-4136 so we can reschedule your sample collection for either the previous or following week for your convenience.

Thank you again for participating in our lead and copper monitoring program. If you have any questions or comments please call Bill Dunn at 498-4136.

Sincerely,

Martin R. McIntyre
Water Systems Supervisor II

April 30, 1993
07200011.009

HDR

Mr. Patrick Chan
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105-3901

Subject: City of Fresno - Lead and Copper Rule Sampling Plan

Dear Patrick:

The City of Fresno initiated their first round of lead and copper monitoring the week of April 19, 1992.

Our material survey concluded that no Tier I-A, or Tier I-B sites could be located in the City of Fresno Service Area. We therefore included in the sampling pool Tier I-C sites only. The first round of samples will include 130 homes. Table 1 is a list of the homes sampled. The City identified eight wells, Table 2, which serve the areas sampled. These wells were sampled and will be analyzed for: lead, copper, pH, conductivity, calcium, alkalinity and temperature.

In addition, twenty five distribution system sampling sites, Table 3, were identified in and around the homes participating in the study for water quality monitoring. These stations were sampled and will be analyzed for: pH, conductivity, calcium, alkalinity and temperature.

Source water quality and distribution system quality will be sampled again in mid-May to comply with the Lead and Copper Rule monitoring requirements.

The City will initiate the second round of sampling the last week of June. We should have all the samples to the laboratory by July 11, 1993. A copy of our sample plan is included for your review.

As soon as we receive the results from the laboratory, we will prepare a report which summarizes the results. A copy of the report will be sent to you and to the California Department of Health Services.

HDR Engineering, Inc.

5175 Hillsdale Circle
El Dorado Hills, California
95762-5700

Telephone
916 939-4100

If for some reason the sampling plan does not meet with your satisfaction or you have any coments about our sampling plan, please contact me as soon as possible, so we can make the necessary changes.

Very truly yours,

Perri Standish-Lee

Perri Standish-Lee
Vice President

PSL/af

cc: Martin McIntyre
Bill Dunn
Doug Kirk
Matt Bullis
Cindy Forbes

TABLE 2. Fresno Lead and Copper Rule
Source Sample Locations

Pump Station Number	Address	Location	Associated Tap Sample Numbers
91	(b) (9) [redacted]	(b) (9) [redacted]	1,3
79			2
KV-DS			4,144,158
86			10
140			Tract B*
99			Tract C*
97			Tract D*
131			Tract E*

Source Sample : Lead, Copper, pH, Temp., Cond., Calcium, Alkalinity Analysis

* The following lists represent the sample numbers taken from each tract.

Tract B	Tract C	Tract D	Tract E
11	25	20	21
18	30	26	27
127	36	39	41
128	38	43	42
129	40	46	48
130	52	50	51
131	53	55	54
132	56	65	64
133	57	72	67
134	58	75	80
135	60	76	81
136	61	84	82
137	62	88	83
138	63	90	95
139	66	92	107
140	69	93	113
141	71	96	164
142	74	114	
143	78	115	
145	79	116	
146	86	117	
147	87	118	
148	89	119	
149	91	120	
150	98	163	
151	99		
152	100		
153	102		
154	103		
155	105		
156	108		
157	109		
159	110		
160	111		
161	112		
166	122		
167	123		
168	124		
169	125		
170	126		
171	165		
172			
173			
174			
175			
176			

TABLE 3. Fresno Lead and Copper Rule Distribution System Sample Locations

Distribution System Sample Number	Distribution System Location Number	Address	Associated Pump Station Number
1	79	(b) (6) [redacted]	91
2	129		79, 97
3	126		KV-DS
4	68		86, 131
5	70		86
6	116		140
7	133		99
8	181		97
9	31		General* (91)
10	130		General* (91)
11	66		General* (KV-DS)
12	159		General* (86, 140)
13	158		General* (140)
14	134		General* (99)
15	34		General* (99)
16	36		General* (99)
17	202		General* (97)
18	81		General* (97)
19	155		General* (131)
20	69		General* (131)
21	82		General**
22	156		General**
23	128		General**
24	117		General**
25	76		General**

* General distribution system sample location , number in ( ) represents remotely associated pump station.

** General distribution system sample located in the same region as the tap sample locations.

Distribution Sample : pH, Temperature, Conductivity, Calcium, Alkalinity Analyses

SAMPLE PLAN
INITIAL MONITORING

FIRST DRAW TAP SAMPLES

The initial monitoring period consists of two consecutive 6-month sample periods during which the water is sampled from the homeowner's tap and analyzed for total lead and copper. The first set of these samples is to be collected between April 20 and 30, 1993. The second set of samples is expected to be collected in July 1993.

A minimum of 100 samples must be taken for each set. Table 1 presents a list of 136 homeowners that volunteered to collect samples at their tap. The instructions the homeowner will use to collect the samples are presented in Figure 1. An attempt should be made to hand deliver the sample bottles and demonstrate the sampling technique to as many homes as possible. Also, the presence of lead solder and copper pipe must be verified in 10-15% of the homes before the first set of samples can be taken.

The sample collection procedures will follow all EPA Guidelines in the Lead and Copper Rule. Some of the important sampling criteria include:

- The sample must be collected from a kitchen or bathroom tap.
- The water must stand in the pipes for at least 6 hours before the sample is collected.
- The sample must be a first-draw collection.
- The sample must be 1 liter in volume.

Sample kits should be prepared which include a 1 liter polyethylene sample bottle and written instruction (which includes a chain of custody form). The sample kits should be assembled in a 1 gallon plastic bag. Prior to delivery of the sample kits a label should be placed on each set of written instructions that includes the sample number and the

address. This sample number must also be entered on the sample bottle label.

The sample kits will be delivered to homeowners in person, if available, after again ascertaining that the home has copper plumbing. The homeowner will be instructed in taking the sample and how to fill out the chain of custody. Sample kits can be left at a homeowners doorstep if they cannot be reached in person. A follow up call to these homeowners should be made to make sure they understand the instructions.

The residents will then collect the sample and leave the sample bottle outside their home for pick-up the next morning. HDR and City Staff will pick-up the samples, verify that the sample number matches the address, and deliver the samples to BSK Laboratories, Inc. for analysis (see table below). A chain of custody must be filled out for all samples before delivery to the laboratory.

Lead and Copper Analytical Methods

Compound	EPA Method	Units	DLR*
Copper	200.7	mg/L	0.010
Lead	239.2	mg/L	0.001

* Detection limit for the purposes of reporting

QA/QC samples will be given to the laboratory along with the homeowner's samples. These samples will include spiked samples with a known concentration of lead, blank samples of distilled water, and duplicate samples split from spiked samples. These samples will represent approximately 10% of the total samples collected.

SOURCE WATER SAMPLES

The initial monitoring period consists of two consecutive 6-month sample periods during which the water is sampled from the well system. These samples are analyzed for lead, copper, pH, conductivity, temperature, alkalinity, and calcium. The first set of these samples is to be collected between April 20 and 30, 1993 along with the first draw tap samples. The second half of this set of samples is expected to be collected the week of May 17, 1993. The second set of samples will be collected the weeks of June 20 and July 12, 1993.

The source water for each first draw sample site must be sampled. Table 2 presents a list of eight well sites which are in the same general area as the first draw tap sample sites.

To collect the well samples, first flush the sample tap. Then collect a sample for field analysis of pH, temperature, and conductivity. Record the field measurements on a log sheet including the date, time, and location of sample. After performing the field analysis, collect the samples for lead, copper, alkalinity, and calcium in sample bottles provided by BSK Laboratories. Cool the samples for calcium and alkalinity to 4° C, label the bottles with the sample location, complete a chain of custody form for these samples, and deliver them to the laboratory within 24 hours for analysis (see table below).

Source Sample Analytical Methods

Compound	EPA Method	Units	DLR*
Copper	200.7	mg/L	0.010
Lead	239.2	mg/L	0.001
Calcium	200.7	mg/L	0.1
Alkalinity	310.1	mg/L as $CaCO_3$	1.0

* Detection limit for the purposes of reporting

DISTRIBUTION SYSTEM SAMPLES

The initial monitoring period consists of two consecutive 6-month sample periods during which the water is sampled twice from the distribution system. These samples are analyzed for pH, conductivity, temperature, alkalinity, and calcium. The first set of these samples is to be collected between April 20 and 30, 1993 along with the first draw tap samples. The second half of this set of samples is expected to be collected the week of May 17, 1993. The second set of samples will be collected the weeks of June 20 and July 12, 1993.

A minimum of 25 samples must be taken for each set. Table 3 presents a list of 25 coliform sample sites which are in the same general area as the first draw tap sample sites.

To collect the distribution system samples, first flush the sample tap as you would to collect a coliform sample. Then collect a sample for field analysis of pH, temperature, and conductivity. Record the field measurements on a log sheet including the date, time, and location of sample. After performing the field analysis, collect the samples for alkalinity and calcium in sample bottles provided by BSK Laboratories. Cool the samples to 4 C, label the bottles with the sample location, complete a chain of custody form for these samples, and deliver them to the laboratory within 24 hours for analysis (see table below).

Distribution System Sample Analytical Methods

Analysis	EPA Method	Units	DLR
Calcium	200.7	mg/L	0.1
Alkalinity	310.1	mg/L as $CaCO_3$	1.0

* Detection limit for the purposes of reporting

FIGURE 1. Fresno Lead and Copper Rule Homeowner Sampling Instructions

PLEASE TAKE THIS WATER SAMPLE FOR CITY OF FRESNO'S WATER DIVISION TOMORROW MORNING ON _____, __/__/93.

IF YOU HAVE ANY QUESTIONS OR CANNOT TAKE THE SAMPLE FOR ANY REASON PLEASE CALL BILL DUNN OR JEFF MURRAY AT 498-4136.

THANK YOU.

DIRECTIONS
RESIDENT TAP SAMPLE COLLECTION PROCEDURES

These samples are being collected to determine the contribution of faucet fixtures and household pipes and/or solder to the lead and copper levels in tap water. This sampling effort is required by the Environmental Protection Agency, and is being accomplished through the cooperation of homeowners and residents.

The collection procedure is described in detail below.

1. Do not use any water for 6-8 hours before sampling. The water department recommends that either early mornings or evenings upon returning home from work are the best sampling times to ensure that the necessary water conditions exist.

2. A kitchen or bathroom cold-water faucet is to be used for sampling. Place the open sample bottle below the faucet and gently open the cold water tap. Slowly fill the sample bottle to the base of the neck and turn off the water. It should take about 45 seconds to fill the bottle.

3. Tightly cap the sample bottle and place in the plastic bag provided. Fill in the information requested on the form below, sign the form, and place in the plastic bag along with the sample bottle. Please review the address label below at this time to ensure that all information contained on the label is correct.

4. Place the sample outside your home for pick-up by 9:00 in the morning.

5. Results from this monitoring effort will be provided to participating customers when reports are generated for the State.

Please call Bill Dunn at 498-4136 if you have any questions regarding these instructions.

TO BE COMPLETED BY RESIDENT:

PLEASE RETURN WITH SAMPLE.

Water was last used: TIME:_____ DATE: _____

Sample was collected: TIME:_____ DATE: _____

I have read the above directions and have taken a tap sample in accordance with these directions.

Signature_____ DATE: _____

Name: _____

TO BE COMPLETED BY THE WATER DEPARTMENT EMPLOYEE:

Sample picked up by:_____ DATE:_____

MEETING AGENDA

May 25, 1993

City of Fresno, Water Division

First Round Initial Monitoring Status

- 130 samples taken
- 126 analyzed to date
- 90th percentile levels for lead (0.0025mg/L) and copper (0.42 mg/L)
- last four samples taken on 5/12-13 and results should be available soon
- only one sample above 11ppb lead at 37ppb

Results to Consumers

- example letter prepared
- letter is individual to each consumer, need to get Fresno letterhead to print the letters, signatures?

Results to EPA

- preliminary summary report drafted for Patrick Chan
- final detailed report after water quality analysis finished for first round of monitoring program (mid-June)

Future Monitoring

- Second water quality samples for first round of initial monitoring during this week (distribution and pumping station sites only)
- Second round of initial monitoring during week of June 21
- Second water quality samples for second round of initial monitoring during week of July 12 (distribution and pumping station sites only)

Materials Survey

- Draft Technical Memo No. 1
- Summarizes and documents the activities of the material survey to the point where the addresses 538 potential Tier 1 sample sites are presented and 162 volunteers from these sites were solicited
- Missing letter from City's distribution department stating that lead lines are replaced as found and the neighbors homes are checked, no known lead lines exist, and when was the last time lead lines were found
- Missing letter from the City to homes initially accepted into the monitoring program but were found to have no lead solder upon field testing

Sampling Plan

- Draft Technical Memo No. 2
- Summarizes the procedures used to select the tap water sample sites as well as the water quality sample sites; procedures for collecting each type of sample and the analysis that must be performed is also included

Report Presentation Format

- In a single binder with the following potential divisions:

  Material Survey
  Sampling Plan
  First Round Initial Monitoring Results
  Second Round Initial Monitoring Results
  Followup Monitoring Results
  EPA / DHS Correspondence

819 water systems found high in lead

■ Unacceptable amounts reported in supplies that serve 30 million people.

By Rudy Abramson
Los Angeles Times

WASHINGTON — Unacceptable amounts of lead have been detected in the public water supplies of 819 medium-sized and large American communities, which together serve 30 million people, the Environmental Protection Agency reported Tuesday.

The levels were monitored in residences in those areas deemed to be at high risk for lead contamination and do not represent average amounts for those water systems, the EPA cautioned. Nevertheless, agency officials said they were "very concerned" over the continuing threat of lead in water supplies, as well as in the air, soil and paint.


Carol Browner

Under federal regulations, when lead in public water exceeds 15 parts per billion, officials must take steps to control water pipe corrosion, teach the public how to minimize the hazard and continue monitoring the supply.

"The reduction of children's exposure to lead is one of EPA's top priorities," EPA Administrator Carol Browner said. "While systems with elevated levels are required to reduce their lead levels through corrosion control measures, there are also important steps that consumers can take to help prevent exposure and increase safety."

Exposure to lead contamination is particularly damaging to infants and children — impairing hearing and eyesight and causing brain damage. It is estimated that one child in every six has elevated levels of lead in the blood. While officials say the source of greatest concern is house paint, about 20 percent of cases are attributed to water supplies.

According to the study made public Tuesday, lead levels as high as 484 parts per billion were recorded at the Marine Corps' Camp Lejeune at Hadnot Point, N.C.

For the most part, the excessive levels were found in systems in the East, which tend to be older and in which lead was used to seal pipe joints.

Altogether, samples from 7,500 water systems have been analyzed. But James Elder, director of the EPA's office of ground water and drinking water, said 1,100 systems failed to conduct required monitoring, leaving them liable for $5,000 federal fines.

Results of the initial survey of big-city systems — those serving more than 50,000 customers — were made available in October. Since then, Elder said, many have begun to reduce levels.

The local story

Fresno is about halfway through a test sampling for lead content in city water, according to Martin McIntyre, city water quality chief.

He said the results so far have been well within the limits set by the Environmental Protection Agency. Fresno has not had problems with lead in city water, he said.

Tests are being conducted in accordance with EPA requirements, which include sampling water in the homes of customers. The corrosive action of water in delivery pipes is a common cause of lead in the water, McIntyre said.

Contamination has been a problem with city wells, however. More than 40 wells have been shut down since 1989 because agricultural contaminants were discovered.

TABLE 3. FRESNO LEAD & COPPER RULE DISTRIBUTION SYSTEM SAMPLE LOCATIONS

Distribution System Sample Number	Distribution System Location Number		Date Sample Taken	Address	Associated Pump Station Number
1	79	5/24	5/3	(b) (6) [redacted]	91
2	129	5/24	5/3		79, 97
3	126	5/24	4/29		KV-DS
4	68	5/24	4/29		86, 131
5	70	5/24	4/29		86
6	116	5/24	5/3		140
7	133	5/26	4/22		99
8	181	5/26	5/3		97
9	31	5/24	5/3		General* (91)
10	130	5/24	5/3		General* (91)
11	66	5/24	4/29		General* (KV-DS)
12	159	5/24	4/29		General* (86, 140)
13	158	5/24	5/3		General* (140)
14	134	5/26	4/30		General* (99)
15	34	5/26	4/30		General* (99)
16	36	5/26	4/30		General* (99)
17	202	5/26	5/3		General* (97)
18	81	5/26	5/3		General* (97)
19	155	5/24	4/29		General* (131)
20	69	5/24	4/30		General* (131)
21	82	5/24	5/3		General**
22	156	5/24	5/3		General**
23	128	5/24	5/3		General**
24	117	5/24	5/3		General**
25	76	5/24	5/4		General**

* General distribution system sample location , number in ( ) represents remotely associated pump station.

** General distribution system sample located in the same region as the tap sample locations.

Distribution Sample = pH, Temperature, Conductivity, Calcium, Alkalinity

Post-it® brand fax transmittal memo 7671	# of pages ▸ 2
To Jeff	From Dave
Co. Water Division	Co. HDC
Dept. Production	Phone #
Fax # 209-[illegible]-1024	Fax #

TABLE 2. FRESNO LEAD & COPPER RULE SOURCE SAMPLE LIST

Date Sample Taken	Pump Station Number	Address	Location	Associated Tap Sample Numbers
5/24 5/3	91	(b) (9)	(b) (9)	1,3
5/24 5/3	79			2
5/24 4/29	KV-DS			4,144,158
5/24 4/29	86			10
5/24 4/28	140			Tract B*
5/26 4/22	99			Tract C*
5/26 5/3	97			Tract D*
5/24 4/29	131			Tract E*

Source Sample = Lead, Copper, pH, Temp., Conductivity, Calcium, Alkalinity

* The following lists represent the sample numbers taken from each tract.

Tract B	Tract C	Tract D	Tract E
18	126	119	42
129	52	93	54
146	71	50	48
130	58	90	53
152	30	117	21
143	100	116	41
153	38	20	80
134	61	118	95
155	87	162	107
137	125	46	64
156	53	75	51
154	74	55	164
150	62	59	81
11	60	92	82
159	78	43	113
160	98	96	67
147	86	88	27
127	110	26	
157	122	39	
148	89	72	
139	57	84	
145	91	120	
142	123	76	
128	111	163	
161	105	28	
136	103	70	
131	66	121	
140	112	65	
149	89	115	
141	63	114	
133	102		
135	99		
151	40		
138	56		
132	109		
	108		
	79		
	36		
	124		
	165		
	25		

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

LOCATION: _____ (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = _____

Date = _____ Time = _____

pH = _____

Temp. = _____ deg C

Conductivity = _____ mS/cm

LOCATION: _____ (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = _____

Date = _____ Time = _____

pH = _____

Temp. = _____ deg C

Conductivity = _____ mS/cm

LOCATION: _____ (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = _____

Date = _____ Time = _____

pH = _____

Temp. = _____ deg C

Conductivity = _____ mS/cm

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

LOCATION: _____ (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = _____

Date = _____ Time = _____

pH = _____

Temp. = _____ deg C

Conductivity = _____ mS/cm

LOCATION: _____ (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = _____

Date = _____ Time = _____

pH = _____

Temp. = _____ deg C

Conductivity = _____ mS/cm

LOCATION: _____ (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = _____

Date = _____ Time = _____

pH = _____

Temp. = _____ deg C

Conductivity = _____ mS/cm

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

LOCATION: _____ (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = _____

Date = _____ Time = _____

pH = _____

Temp. = _____ deg C

Conductivity = _____ mS/cm

LOCATION: _____ (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = _____

Date = _____ Time = _____

pH = _____

Temp. = _____ deg C

Conductivity = _____ mS/cm

LOCATION: _____ (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = _____

Date = _____ Time = _____

pH = _____

Temp. = _____ deg C

Conductivity = _____ mS/cm

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

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(D-## = DISTRIBUTION SYSTEM SITE)

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Sample Activity Form

City of Fresno - Water Division, 1910 E. University Ave., Fresno, CA 93703

Sampled by: _____ Relinquished by: _____ Date : ___/___/___ Time: ___ : ___ am pm

Received by: _____ Date : ___/___/___ Time: ___ : ___ am pm

Laboratory: _____ Lab Reference: _____ No of Samples: _____

Sample Detail

#	Date	Time	Type	Code	Location Description	502.2	504	505	507	508	515	525	531	547	900	N	F	CTY1					

Comments or Instructions:

Sample Activity Form

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Sample Detail

#	Date	Time	Type	Code	Location Description	5022	5044	5055	5077	5088	5155	5255	5331	5477	9000	N	F	CTY1					

Comments or Instructions:

Date: May 25, 1993

Attendees: Martin McIntyre (City of Fresno)
Bill Burmeister (City of Fresno)
Doug Kirk (City of Fresno)
Jeff Murray (City of Fresno)
Bill Dunn (City of Fresno)
Matt Bullis (City of Fresno)
Perri Standish-Lee (HDR Engineering)
Dave Murbach (HDR Engineering)

HDR
Meeting Minutes

Location: City of Fresno Water Division Offices

Subject: Lead & Copper Rule Compliance Monitoring Project Status

NOTE: BOLD TEXT INDICATES ACTION ITEMS

I. STATUS OF FIRST ROUND OF INITIAL MONITORING PROGRAM

a. Tap Samples

- 130 samples were collected and 126 have been analyzed to date (the last four samples were collected on 5/12 and 5/13 and results are not yet available).
- The 90th percentile level for lead is 0.0025 mg/L.
- The 90th percentile level for copper is 0.42 mg/L.
- These results are well below the EPA action levels of 0.015 mg/L for lead and 1.30 mg/L for copper.
- Only one sample had a lead concentration greater than the action level (0.037 mg/L). Jeff M. collected a duplicate sample this morning to verify this high level. The resident also told Jeff that they had no new faucets.
- An example letter that will transmit the individual sample results to each resident in the monitoring program was presented and discussed. It was decided to hold off sending the results until the second round of sampling was complete. **HDR will change the letter to incorporate the results of both sampling events as well as bolding the residence's results and highlighting the statement that the overall results are very low.**

b. Distribution System and Source Samples

- 25 distribution samples and 8 source samples were collected and the results of about 2/3 of them have been received to date.

- The results show that there was no detectable lead in the source samples.

- Jeff is completing the second half of the distribution system and source sampling this week. These results are expected in mid-June and are the last samples that need to be taken for the first round of the initial monitoring program.

c. Results to EPA

- A draft letter and technical memo for Patrick Chan (EPA) was presented that summarizes the results of the first round of sampling that has been completed to date. The technical memo will be updated and reissued when the results of the second distribution system and source sampling are received. There were no comments on the draft letter so HDR will issue the letter and technical memo to EPA as soon as the last four tap sample results are received.

II. SECOND ROUND OF INITIAL MONITORING PROGRAM

a. Scheduling

- The tap water sampling for the second round is scheduled to start on June 21 and the majority of the samples should be collected by June 24.

- The first half of the distribution system and source water sampling should also occur during the week of June 21.

- The second half of the distribution system and source water sampling should occur three weeks later during the weeks of either July 12 or July 19.

b. Resident Notification

- **HDR will prepare a letter to the 130 homes sampled during the first round which notifies them of the dates for the second round of sampling. After the City's review and preparation of an original letter, HDR will make copies and send the letters.**

III. MATERIALS SURVEY AND SAMPLING PLAN

a. Materials Survey

- HDR presented a draft technical memo for the City's review which summarizes the activities of the materials survey and how the tap water sample sites were located.

- The technical memo is missing a letter from the City's distribution department (to the production department) that states that no known lead lines exist, lead lines are replaced as they are found and the neighborhood is checked for additional lead lines, and when was the last time lead lines were found (if someone can recall). **Bill B. said he would make sure the letter was written.**

b. Sampling Plan

- HDR presented a draft technical memo for the City's review which summarizes the procedures used to collect and analyze the tap water, distribution system, and source water samples.

IV. GENERAL ITEMS

a. Report Presentation Format

- Perri S. suggested that HDR prepare a binder in which all reports, sampling results, and EPA correspondence would be contained. The binder would have sections for the following items:

  Materials Survey
  Sampling Plans
  First Round Initial Monitoring Results
  Second Round Initial Monitoring Results
  Follow-up Monitoring Results
  EPA/DHS Correspondence

- Three copies of this binder will be prepared for the City along with one copy each for EPA and DHS.

August 5, 1993
07200011.012

HDR

Mr. Patrick Chan
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, California 94105-3901

Subject: **City of Fresno - Lead and Copper Rule, Preliminary Report of Second Round Monitoring Results**

Dear Patrick:

The intent of this letter is to transmit to you a preliminary summary of the tap water sample analysis results and the first set of water quality analysis results. A final report detailing these results will follow after the second round of water quality analysis is complete. The second round of samples were collected between July 20 and 22, and the results are expected near the end of August.

The City of Fresno sampled 130 of the 131 residences in their Tier 1-C sample pool for lead and copper. The one sample not collected was from a vacant residence. In addition, water quality samples were collected from 25 distribution system sites and 7 pump stations that were identified as the source water for the residences sampled. The attached technical memorandum summarizes all of these results.

If you have any questions concerning these results, please call me at 916-939-4100.

Very truly yours,

P. Standish-Lee

Perri Standish-Lee
Vice President

PPSL/jh

cc: Martin McIntyre - City of Fresno
Doug Kirk - City of Fresno
Bill Dunn - City of Fresno
Matt Bullis - City of Fresno
Cindy Forbes - California Department of Health Services
Steve Reiber - HDR Engineering, Inc.
Dave Murbach - HDR Engineering, Inc.

HDR Engineering, Inc.
5175 Hillsdale Circle
El Dorado Hills, California
95762-5700
Telephone
916 939-4100

CITY OF FRESNO, WATER DIVISION
LEAD AND COPPER RULE COMPLIANCE MONITORING
RESULTS OF INITIAL MONITORING - SECOND ROUND
TECHNICAL MEMORANDUM

TAP WATER SAMPLE RESULTS

Table 1 presents the results of the tap water analysis for lead and copper. The table lists the lead and copper concentrations in descending order. This was done in order to determine the 90th percentile levels as required by the Lead and Copper Rule.

Lead Results

The 90th percentile lead level was determined by multiplying the number of samples taken by 0.9 (130 x 0.9 = 117). The 90th percentile lead level for the City of Fresno samples is 0.008 mg/L which is below the EPA action level of 0.015 mg/L.

Copper Results

The 90th percentile copper level was determined in the same way as for lead. The 90th percentile copper level for the City of Fresno is 0.43 mg/L which is below the EPA action level of 1.3 mg/L.

DISTRIBUTION SYSTEM AND SOURCE SAMPLE RESULTS

Water quality analysis was performed on 25 distribution system locations and 7 points of entry to the distribution system. The results of this analysis are summarized in Tables 2 and 3. These results include both sets of sampling that were performed in conjunction with the first round of initial monitoring.

The lead concentration of the source water was less than 0.001 mg/L at 6 of the 7 sample locations. At W-KVDS, lead was detected in the water quality samples and reported at 0.0025 mg/L. It should be noted that the laboratory reports lead levels between 0.001 and 0.0049 mg/L as 0.0025 mg/L.

TABLE 1. TAP WATER SAMPLE ANALYSIS

Ranking		Sample No.	Lead mg/L		Sample No.	Copper mg/L
130		161	0.110		153	0.76
129		155	0.072		27	0.62
128		151	0.053		80	0.57
127		148	0.046		130	0.56
126		173	0.025		139	0.56
125		142	0.021		137	0.55
124		87	0.012		166	0.55
123		145	0.012		10	0.54
122		170	0.012		142	0.51
121		114	0.011		83	0.49
120		18	0.010		175	0.49
119		92	0.010		141	0.48
118		154	0.009		152	0.46
117	90th %	25	0.008	90th %	18	0.43
116		119	0.008		128	0.43
115		140	0.008		143	0.43
114		65	0.007		46	0.42
113		120	0.007		113	0.42
112		79	0.006		172	0.42
111		102	0.006		173	0.42
110		135	0.006		146	0.41
109		30	0.005		149	0.40
108		108	0.005		55	0.39
107		1	0.0025*		114	0.39
106		2	0.0025*		169	0.39
105		10	0.0025*		127	0.38
104		11	0.0025*		81	0.37
103		20	0.0025*		129	0.37
102		26	0.0025*		147	0.36
101		27	0.0025*		159	0.36
100		38	0.0025*		79	0.35
99		39	0.0025*		51	0.34
98		41	0.0025*		63	0.34
97		43	0.0025*		88	0.34
96		48	0.0025*		89	0.34
95		53	0.0025*		90	0.32
94		54	0.0025*		102	0.31
93		60	0.0025*		163	0.31
92		64	0.0025*		171	0.31
91		66	0.0025*		1	0.29
90		75	0.0025*		107	0.29
89		78	0.0025*		161	0.29
88		81	0.0025*		168	0.29
87		89	0.0025*		52	0.28
86		90	0.0025*		53	0.28
85		93	0.0025*		111	0.28
84		100	0.0025*		132	0.28

TABLE 1. TAP WATER SAMPLE ANALYSIS

Ranking		Sample No.	Lead mg/L		Sample No.	Copper mg/L
83		109	0.0025*		42	0.27
82		112	0.0025*		64	0.27
81		116	0.0025*		131	0.27
80		117	0.0025*		140	0.27
79		118	0.0025*		150	0.27
78		122	0.0025*		54	0.26
77		127	0.0025*		66	0.26
76		128	0.0025*		174	0.26
75		130	0.0025*		25	0.25
74		131	0.0025*		109	0.25
73		132	0.0025*		112	0.25
72		133	0.0025*		125	0.25
71		134	0.0025*		100	0.24
70		137	0.0025*		120	0.24
69		139	0.0025*		133	0.24
68		141	0.0025*		155	0.24
67		143	0.0025*		2	0.23
66		146	0.0025*		76	0.23
65		147	0.0025*		119	0.23
64		149	0.0025*		30	0.22
63		150	0.0025*		48	0.22
62		152	0.0025*		65	0.22
61		156	0.0025*		40	0.21
60		163	0.0025*		50	0.21
59		166	0.0025*		105	0.21
58		167	0.0025*		124	0.21
57		168	0.0025*		39	0.20
56		171	0.0025*		58	0.20
55		172	0.0025*		78	0.20
54		175	0.0025*		98	0.20
53		176	0.0025*		60	0.19
52		3	<0.001		71	0.19
51		4	<0.001		115	0.19
50		21	<0.001		134	0.19
49		36	<0.001		144	0.19
48		40	<0.001		151	0.19
47		42	<0.001		156	0.19
46		46	<0.001		61	0.18
45		50	<0.001		93	0.18
44		51	<0.001		136	0.18
43		52	<0.001		148	0.18
42		55	<0.001		38	0.17
41		56	<0.001		41	0.17
40		57	<0.001		69	0.17
39		58	<0.001		110	0.17
38		61	<0.001		126	0.17
37		63	<0.001		158	0.17

TABLE 1. TAP WATER SAMPLE ANALYSIS

Ranking		Sample No.	Lead mg/L		Sample No.	Copper mg/L
36		67	<0.001		170	0.17
35		69	<0.001		4	0.16
34		71	<0.001		26	0.16
33		72	<0.001		87	0.16
32		74	<0.001		108	0.16
31		76	<0.001		91	0.15
30		80	<0.001		92	0.15
29		83	<0.001		135	0.15
28		84	<0.001		36	0.14
27		86	<0.001		56	0.14
26		88	<0.001		57	0.14
25		91	<0.001		86	0.13
24		95	<0.001		118	0.13
23		98	<0.001		122	0.13
22		103	<0.001		145	0.13
21		105	<0.001		164	0.13
20		107	<0.001		67	0.12
19		110	<0.001		95	0.12
18		111	<0.001		176	0.12
17		113	<0.001		103	0.10
16		115	<0.001		84	0.10
15		123	<0.001		72	0.10
14		124	<0.001		11	0.09
13		125	<0.001		43	0.09
12		126	<0.001		75	0.08
11		129	<0.001		117	0.07
10		136	<0.001		123	0.06
9		144	<0.001		167	0.06
8		153	<0.001		165	0.05
7		157	<0.001		154	0.025**
6		158	<0.001		116	0.025**
5		159	<0.001		74	0.025**
4		164	<0.001		21	0.025**
3		165	<0.001		20	0.025**
2		169	<0.001		3	0.025**
1		174	<0.001		157	<0.01

* The laboratory reports lead values between 0.0010 and 0.0049 mg/L as 0.0025 mg/L.

** The laboratory reports copper values between 0.010 and 0.049 mg/L as 0.025 mg/L.

TABLE 2. DISTRIBUTION SYSTEM WATER QUALITY ANALYSIS

Sample No.	Samples Taken 6/23/93 - 7/1/93				
	Alkalinity (mg/L CaCO3)	Calcium (mg/L)	pH	Temp. (deg C)	Cond. (mS/cm)
D-31	140	29	7.26	26.1	0.35
D-34	120	29	7.68	28.6	0.30
D-36	110	26	7.51	25.8	0.30
D-66	75	16	7.47	25.4	0.21
D-68	170	44	7.13	24.9	0.47
D-69	160	38	7.03	26.7	0.47
D-70	120	28	7.12	29.7	0.28
D-76	91	21	7.30	24.5	0.23
D-79	130	28	7.43	26.5	0.27
D-81	110	26	7.24	29.7	0.29
D-82	110	26	7.34	25.6	0.28
D-116	110	29	7.03	25.8	0.36
D-117	130	29	7.32	28.1	0.31
D-126	99	24	7.74	23.9	0.29
D-128	110	21	7.21	26.2	0.27
D-129	120	27	7.25	25.8	0.28
D-130	110	24	7.28	25.2	0.26
D-133	99	22	7.45	25.4	0.25
D-134	93	21	7.50	26.7	0.23
D-155	110	24	7.23	29.7	0.25
D-156	110	21	7.20	29.5	0.28
D-158	120	30	7.16	27.8	0.35
D-159	130	29	7.22	25.7	0.37
D-181	120	27	7.32	26.6	0.31
D-202	77	20	7.68	22.8	0.23

Average	115	26	7.32	26.5	0.30
Minimum	75	16	7.03	22.8	0.21
Maximum	170	44	7.74	29.7	0.47

TABLE 3. SOURCE WATER QUALITY ANALYSIS

Sample No.	Samples Taken 6/23/93 - 7/1/93						
	Lead (mg/L)	Copper (mg/L)	Alkalinity (mg/L CaCO3)	Calcium (mg/L)	pH	Temp. (deg C)	Cond. (mS/cm)
W-79	<0.001	<0.01	120	27	7.43	26.5	0.27
W-86	NS	NS	NS	NS	NS	NS	NS
W-91	<0.001	<0.01	97	23	7.63	22.3	0.27
W-97	<0.001	<0.01	120	27	7.36	22.9	0.30
W-99	<0.001	0.025*	85	18	7.53	22.1	0.27
W-131	<0.001	<0.01	95	21	7.42	24.4	0.26
W-140	<0.001	<0.01	110	31	7.12	23.4	0.36
W-KVDS	0.0025**	0.025*	110	26	7.46	23.3	0.28
Average	0.0012	0.014	105	25	7.42	23.6	0.29
Minimum	<0.001	<0.01	85	18	7.12	22.1	0.26
Maximum	0.0025**	0.025*	120	31	7.63	26.5	0.36

NS = No sample taken because pump was out of service. With this pump out of service, W-131 is the source for the area served by W-86.

* The laboratory reports copper values between 0.010 and 0.049 mg/L as 0.025 mg/L.

** The laboratory reports lead values between 0.0010 and 0.0049 mg/L as 0.0025 mg/L.

TABLE 5. Distribution System Sample Locations

Distribution System Sample Number	Distribution System Location Number	Address	Associated Pump Station Number
7/21 1	79	(b) (6) [redacted]	91
7/21 2	129		79, 97
7/20/95 3	126		KV-DS
7/21 4	68		86, 131
7/21 5	70		86
7/21 6	116		140
7/21 7	133		99
7/21 8	181		97
7/21 9	31 29		General* (91)
7/20 10	130		General* (91)
7/20 11	166		General* (KV-DS)
7/21 12	159		General* (86, 140)
7/21 13	158		General* (140)
7/20 14	134		General* (99)
7/20 15	34 547		General* (99)
7/20 16	36 [redacted]		General* (99)
7/21 17	202		General* (97)
7/20 18	81		General* (97)
7/21 19	155		General* (131)
7/21 20	69		General* (131)
7/20 21	82		General**
7/21 22	156		General**
7/21 23	128		General**
7/21 24	117		General**
7/20 25	76		General**

* General distribution system sample location , number in ( ) represents remotely associated pump station.

** General distribution system sample located in the same region as the tap sample locations.

TABLE 3. Source Water Sample Locations

Pump Station Number	Address	Location	Associated Tap Sample Numbers
91	(b) (9)		1,3
79			2
KV-DS			4,144,158
86			10
140			Tract B*
99			Tract C*
97			Tract D*
131			Tract E*

* Tract B contains 63 sample sites, Tract C contains 46 sample sites, Tract D contains 29 sample sites, and Tract E contains 17 sample sites.

TABLE 4. Source Sample Analytical Methods

Compound	EPA Method	Units	DLR*	Sample Container
Copper	200.7	mg/L	0.010	1 L polyethylene
Lead	239.2	mg/L	0.001	taken with copper
Calcium	200.7	mg/L	0.1	200 mL polyethylene
Alkalinity	310.1	mg/L as $CaCO_3$	1.0	100 mL polyethylene

* Detection limit for the purposes of reporting

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

LOCATION: W-140 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A. M

Date = 7/20/93 Time = 9:20 AM

pH = 7.18

Temp. = 22.7 deg C

Conductivity = 0.31 mS/cm

LOCATION: W-91 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = E.B.

Date = 7/20/93 Time = 10:10A

pH = 7.50

Temp. = 22.4 deg C

Conductivity = 0.26 mS/cm

LOCATION: D-76 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = E.B

Date = 7/20/93 Time = 12:35p

pH = 7.53

Temp. = 27.1 deg C

Conductivity = 0.31 mS/cm

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

LOCATION: D-126 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A.M

Date = 7/20/93 Time = 1:00 PM

pH = 7.39

Temp. = 27.3 deg C

Conductivity = 0.26 mS/cm

LOCATION: W- (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = E.S.

Date = 7/20/93 Time =

pH = 7.37

Temp. = 24.3 deg C

Conductivity = 0.27 mS/cm

LOCATION: D-66 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A.M

Date = 7/20/93 Time = 1:20 PM

pH = 7.37

Temp. = 27.4 deg C

Conductivity = 0.23 mS/cm

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

LOCATION: D-130 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = E.B.

Date = 7/20/93 Time = 1:30p

pH = 7.33

Temp. = 24.7 deg C

Conductivity = 0.27 mS/cm

LOCATION: D-81 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A.N.

Date = 7/20/93 Time = 1:45p

pH = 7.52

Temp. = 25.7 deg C

Conductivity = 0.29 mS/cm

LOCATION: D-82 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = [illegible]

Date = [illegible] Time = 1:55p

pH = 7.45

Temp. = 25.1 deg C

Conductivity = 0.30 mS/cm

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

LOCATION: D-34 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A.M.

Date = 7/20/93 Time = 2:15 PM

pH = 7.67

Temp. = 32.0 deg C

Conductivity = 0.27 mS/cm

LOCATION: D-36 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = F.B.

Date = 7/20/93 Time = 2:30 PM

pH = 7.60

Temp. = 26.5 deg C

Conductivity = 2.28 mS/cm

LOCATION: D-37 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = [illegible]

Date = 7/20/93 Time = 2:45 PM

pH = 7.69

Temp. = 27.7 deg C

Conductivity = 2.28 mS/cm

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

LOCATION: D-134 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = F.B.

Date = 7/20/93 Time = 3:05p

pH = 7.53

Temp. = 29.7 deg C

Conductivity = 0.23 mS/cm

LOCATION: _____ (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = _____

Date = _____ Time = _____

pH = _____

Temp. = _____ deg C

Conductivity = _____ mS/cm

LOCATION: _____ (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = _____

Date = _____ Time = _____

pH = _____

Temp. = _____ deg C

Conductivity = _____ mS/cm

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

LOCATION: W-99 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A.M.

Date = 7/21/93 Time = 8:10A

pH = 7.62

Temp. = 22.7 deg C

Conductivity = 0.24 mS/cm

LOCATION: D-202 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = E.S.

Date = 7/21/93 Time = 8:40A

pH = 7.47

Temp. = 24.6 deg C

Conductivity = 0.29 mS/cm

LOCATION: W-27 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = E.S.

Date = 7/21/93 Time = 8:50A

pH = 7.45

Temp. = 21.4 deg C

Conductivity = 0.29 mS/cm

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

LOCATION: D-68 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A.M.

Date = 7/21/93 Time = 10 AM

pH = 7.21

Temp. = 22.5 deg C

Conductivity = 0.41 mS/cm

LOCATION: D-69 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = E.D.

Date = 7/21/93 Time = 9:10A

pH = 7.17

Temp. = 27.0 deg C

Conductivity = 0.37 mS/cm

LOCATION: W-131 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A.M.

Date = 7/21/93 Time = 10:30 AM

pH = 7.35

Temp. = 24.0 deg C

Conductivity = 0.23 mS/cm

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

LOCATION: W-155 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = [illegible]

Date = [illegible] Time = 10:40A

pH = 7.45

Temp. = 27.1 deg C

Conductivity = 0.21 mS/cm

LOCATION: D-117 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A.M

Date = 7/21/93 Time = 10:50 AM

pH = 7.30

Temp. = 27.7 deg C

Conductivity = 0.26 mS/cm

LOCATION: D-[illegible] (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = [illegible]

Date = 7/21/93 Time = [illegible]A

pH = 7.24

Temp. = [illegible] deg C

Conductivity = 0.27 mS/cm

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

LOCATION: D-159 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = G.T.

Date = 7/21/93 Time = 11:15 AM

pH = 7.20

Temp. = 26.5 deg C

Conductivity = 0.29 mS/cm

LOCATION: D-158 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = F.J.

Date = 7/21/93 Time = 11:25A

pH = 7.16

Temp. = 27.0 deg C

Conductivity = 0.35 mS/cm

LOCATION: D-116 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = G.T.

Date = 7/21/93 Time = 11:40 AM

pH = 7.11

Temp. = 26.7 deg C

Conductivity = 0.34 mS/cm

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

LOCATION: D-156 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = E.B.

Date = 7/21/93 Time = 1:00 P

pH = 7.17

Temp. = 28.1 deg C

Conductivity = 0.35 mS/cm

LOCATION: D-128 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A.M.

Date = 7/21/93 Time = 1:25 P

pH = 7.13

Temp. = 25.4 deg C

Conductivity = 0.32 mS/cm

LOCATION: D-31 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = [illegible]

Date = 7/21/93 Time = 1:35 P

pH = 7.20

Temp. = 25.1 deg C

Conductivity = 0.32 mS/cm

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

LOCATION: D-79 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A.M.

Date = 7/21/93 Time = 1:50 P

pH = 7.43

Temp. = 23.6 deg C

Conductivity = 0.26 mS/cm

LOCATION: W-79 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = E.S.

Date = 7/21/93 Time = 2:00 P

pH = 7.25

Temp. = 23.3 deg C

Conductivity = 0.29 mS/cm

LOCATION: D-181 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = A.M.

Date = 7/21/93 Time = 2:15 P

pH = 7.32

Temp. = 28.4 deg C

Conductivity = 0.29 mS/cm

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

LOCATION: D-129 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = F.B.

Date = 2/2/93 Time = 2:25p

pH = 7.26

Temp. = 31.4 deg C

Conductivity = 0.31 mS/cm

LOCATION: _____ (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = _____

Date = _____ Time = _____

pH = _____

Temp. = _____ deg C

Conductivity = _____ mS/cm

LOCATION: _____ (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = _____

Date = _____ Time = _____

pH = _____

Temp. = _____ deg C

Conductivity = _____ mS/cm

FRESNO LEAD & COPPER RULE

DISTRIBUTION & WELL SAMPLE FIELD LOG

LOCATION: W-85 (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = E. B.

Date = 2/22/17 Time = 9:05A

pH = 7.41

Temp. = 22.1 deg C

Conductivity = 0.29 mS/cm

LOCATION: _____ (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = _____

Date = _____ Time = _____

pH = _____

Temp. = _____ deg C

Conductivity = _____ mS/cm

LOCATION: _____ (W-## = WELL SITE)
(D-## = DISTRIBUTION SYSTEM SITE)

Samplers Initials = _____

Date = _____ Time = _____

pH = _____

Temp. = _____ deg C

Conductivity = _____ mS/cm

Sample Activity Form

City of Fresno - Water Division, 1910 E. University Ave., Fresno, CA 93703

Sampled by: ARTHUR NAVARRO Relinquished by: [signature] Date: 7/20/93 Time: 3 : 40 ~~am~~ pm

Received by: [signature] Date: 7/20/93 Time: 15 : 40 am (pm)

Laboratory: BSK Lab Reference: 1932 No of Samples: 2623

Sample Detail

#	Date	Time	Type	Code	Location Description	502.2	504	505	507	508	515	525	531	547	900	N	F	CTY1	Pb/Cu/Turb	Low DLR	Alkalinity	Calcium
1	7/20/93	9:20 AM	PS		W-140														X	X	X	X
2	7/20/93	10:10 AM	PS		W-91														X	X	X	X
3	7/20/93	1:10 PM	PS		W-KVDS														X	X	X	X
4	7/20/93	12:35 PM	M		D-76																X	X
5	7/20/93	1:00 PM	M		D-126																X	X
6	7/20/93	1:20 PM	M		D-66																X	X
7	7/20/93	1:30 PM	M		D-130																X	X
8	7/20/93	1:45	M		D-81																X	X
9	7/20/93	1:55 PM	M		D-82																X	X
10	7/20/93	2:15 PM	M		D-34																X	X

Comments or Instructions:

BSK Log #: B32 TYPE: S (L) G
Sample Seals: (A) F B Due Date: 7/30/93
Containers: (V) B L

Sample Activity Form

City of Fresno - Water Division, 1910 E. University Ave., Fresno, CA 93703

Sampled by: Arthur Navarro Relinquished by: Arthur Navarro Date: 7/20/93 Time: 3 : 40 ~~am~~ pm

Received by: J. A. Zerr Date: 7/20/93 Time: 15 : 40 am (pm)

Laboratory: BSK Lab Reference: 1932 No of Samples: 6

Sample Detail

#	Date	Time	Type	Code	Location Description	502.2	504	505	507	508	515	525	531	547	900	N	F	CTY1	Pb/Cu Tier	Low DLR	Alkalinity	Calcium
11	7/20/93	2:30 PM	M		D-36																X	X
12	7/20/93	2:45 PM	M		D-133																X	X
13	7/20/93	3:05 PM	M		D-134																X	X
14																						

Comments or Instructions:

BSR Log #: 1932 TYPE: S (L) G

Sample Seals: (A) F B Due Date: 7/30/93

Containers: (8) B L

Sample Activity Form

1672

City of Fresno - Water Division, 1910 E. University Ave., Fresno, CA 93703

Sampled by: Arthur Navarro Relinquished by: Arthur Navarro Date: 7/21/93 Time: 15 : 30 am p

Received by: J. C. Vera Date: 7/21/93 Time: 15 : 30 am pm

Laboratory: BSK Lab Reference: 1951 No of Samples: _____

Sample Detail

#	Date	Time	Type	Code	Location Description	502.2	504	505	507	508	515	525	531	547	900	N	F	CTY1	Pb/Cu Tech	Low DLR Calcium	Alkalinity
1	7/21/93	8:10 A	PS		W-99														X	X	X X
2	7/21/93	8:40 A	M		D-202																X X
3	7/21/93	8:50 A	P.S.		W-97														X	X	X X
4	7/21/93	10:00 A	M		D-68																X X
5	7/21/93	10:10 A	M		D-69																X X
6	7/21/93	10:30 A	PS.		W-131														X	X	X X
7	7/21/93	10:40 A	M		D-155																X X
8	7/21/93	10:50 A	M		D-117																X X
9	7/21/93	11:00 A	M		D-70																X X
10	7/21/93	11:15 A	M		D-159																X X

Comments or Instructions:

BSK Log #: 1951 TYPE: S (L) G

Sample Seals: (A) P B Due Date: 8/2/93

Containers: (1) B L

2072

Sample Activity Form

City of Fresno - Water Division, 1910 E. University Ave., Fresno, CA 93703

Sampled by: ARTHUR NAVARRO Relinquished by: Arthur Navarro Date: 7/21/93 Time: 15 : 30 am pm

Received by: J. C. Vera Date: 7/20/93 (21) Time: 15 : 30 am pm

Laboratory: BSK Lab Reference: 1951 No of Samples: _____

Sample Detail

#	Date	Time	Type	Code	Location Description	502.2	504	505	507	508	515	525	531	547	900	N	F	CTY1	Pb/Cu/Turb	Low DLR Calcium	Alkalinity
11	7/21/93	11:25 A	M		D-158															X	X
12	7/21/93	11:40 A	M		D-116															X	X
13	7/21/93	1:00 P	M		D-156															X	X
14	7/21/93	1:25 P	M		D-128															X	X
15	7/21/93	1:35 P	M		D-31															X	X
16	7/21/93	1:50 P	M		D-79															X	X
17	7/21/93	2:00 P	P.S.		W-79														X	X	X
18	7/21/93	2:15 P	M		D-181															X	X
19	7/21/93	2:25 P	M		D-129															X	X
20	7/20/93	10:30 P	AD		78														X	X	

Comments or Instructions:

BSK Log #: 1951 TYPE: S (D) G

Sample Seals: (A) P B Due Date: 8/2/93

Containers: (1) B L

Sample Activity Form

City of Fresno - Water Division, 1910 E. University Ave., Fresno, CA 93703

Sampled by: Arthur Navarro Relinquished by: Arthur Navarro Date: 7/22/93 Time: 09:43 (am) pm

Received by: Cecil Harris Date: 7/22/93 Time: 09:43 (am) pm

Laboratory: BSK Lab Reference: _____ No of Samples: 3

Sample Detail

#	Date	Time	Type	Code	Location Description	502.2	504	505	507	508	515	525	531	547	900	N	F	CTY 1	Pb/Cu first	Low DLR Calcium	Calcium	Alkalinity
1	7/22/93	9:05 A	P.S.		W-86														X	XX		X

Comments or Instructions:

BSK Log #: 1956 S (L) G
Sample #: (A)
Container: (E) 8-3-93